


**FUNCTIONALIZED ELASTOMER NANOCOMPOSITE**

**Patent number:** WO2004005387  
**Publication date:** 2004-01-15  
**Inventor:** GONG CAIGUO (US); TSOU ANDY H (US); DIAS ANTHONY J (US); KARP KRISS R (US); POOLE BEVERLY J (US)  
**Applicant:** EXXONMOBIL CHEM PATENTS INC (US); GONG CAIGUO (US); TSOU ANDY H (US); DIAS ANTHONY J (US); KARP KRISS R (US); POOLE BEVERLY J (US)  
**Classification:**  
- **international:** C08K3/34; C08L51/00  
- **european:** C08K3/34B  
**Application number:** WO2003US16944 20030530  
**Priority number(s):** US20020394098P 20020705

**Cited documents:** DE19842845**Abstract of WO2004005387**

An embodiment of the present invention is a nanocomposite comprising a clay and an elastomer comprising at least C2 to C10 olefin derived units; wherein the elastomer also comprises functionalized monomer units pendant to the elastomer. Desirable embodiments of the elastomer include poly (isobutylene-co-p-alkylstyrene) elastomers and poly(isobutylene-co-isoprene) elastomers, which are functionalized via Friedel-Crafts reaction with a Lewis acid and a functionalizing agent such as acid anhydrides and/or acylhalides. The clay is exfoliated in one embodiment by the addition of exfoliating agents such as alkyl amines and silanes to the clay. The composition can include secondary rubbers such as general purpose rubbers, and curatives, fillers, and the like. The nanocomposites of the invention have improved air barrier properties such as are useful for tire innerliners and innertubes.

---

Data supplied from the **esp@cenet** database - Worldwide